On the island of Haiti-Santo Domingo the damage was apparently negligible outside of the Dominican capital and its immediate environs. The surface friction over the mountain masses west of the city damped the storm to such an extent that beyond that point it was barely traceable, and it finally passed to the northeast over the Atlantic.

While the destructive effects of this storm in Santo Domingo, where 4,000 lives were lost [1] and property damage has been roughly estimated at $50,000,000, would class it as a major disaster, for Porto Rico it will be listed among the "beneficial" storms in that it caused much needed moderate to heavy rains throughout the island. The greatest amount reported was over 6 inches at Cabo Rojo; the least, strangely enough, was over the middle of the south coast, where it was under an inch. On the north coast it varied from somewhat less than an inch to more than 2 inches; in the interior from 1 to 4 inches.

APPENDIX I.—STORM CONDITIONS ENCOUNTERED BY THE STEAMSHIP "COAMO" SEPTEMBER 3, 1930

By BENJAMIN PARRY
[Western Bureau, New York City]

The steamship *Coamo*, flagship of the Porto Rico Line, is a vessel of 7,000 tons displacement. She plies between New York, San Juan, and Santo Domingo during the day of arrival, depending upon cargo requirements.

On September 1, the *Coamo* arrived at San Juan, but canceled her departure for Santo Domingo, due to advices that indicated a hurricane central off Dominica. The ship's barometer, 30 inches at 4 p. m., showed a downward trend during the night, and at 8 a. m., September 2, registered 29.87. Meanwhile the wind, which had been light east-southeast, backed to northeast, with moderate velocity. At 8 a. m., September 2, the following warning was issued by the San Juan office of the Weather Bureau:

> Center of storm is now apparently directly south of Porto Rico, about latitude 16° 13′, longitude 67° 00′, moving west-northwest. Storm will not touch Porto Rico. Advise caution next 12 hours for all shipping south of Santo Domingo and Haiti.

As the *Coamo* was now hours behind schedule it was decided to sail at 3 p. m. The ship departed with a light east-southeast wind which later backed to northeast, increasing, and a slowly falling barometer. At 11 p. m. the vessel was 5 miles south of Saona Island, steering west. She now encountered a moderate northeast gale and rough sea. As the vessel progressed and passed under the lee of the land the gale moderated and light rain began falling. By midnight the barometer had dropped to 29.68, with moderate northeast gale, and light rain continuing. At 4 a. m., September 3, the barometer ceased falling and the sky appeared to be clearing. During the next five hours the barometer gradually rose and at 9 a. m. stood at 29.72. The wind remained moderate north-northeast and sky continued to brighten. At 9:30 a. m. the *Coamo* was 5 miles southeast of the city of Santo Domingo. The harbor was too rough to venture for anchorage. The ship now cruised outside, headed east with engines slow ahead, awaiting further moderation of sea within the harbor. At 10 a. m. the pressure again started downward and a tremendously high following swell and rough northeast beam sea set in. The ship pitched and rolled heavily, shipping spray over hatches and decks. By 10:30 a whole gale from northeast was encountered with driving rain, making it necessary to sound fog signals continuously. During the next hour the pressure continued to fall and at 11:30 a. m. reached 29.45. The wind had attained a velocity of 125 miles per hour, and the ship became unmanageable. At noon the barometer registered 28.22, having fallen 1.23 inches in 30 minutes. The wind was now blowing 150 miles per hour which carried the rain and spray in sheets cutting the visibility to a few yards. Shortly after noon the wind velocity dropped rapidly and at 12:25 p. m. the ship was in a calm, with heavy confused sea pitching and seething, resembling a boiling cauldron. Hundreds of birds were seen flying about or resting on the ship. The barometer continued to drop, the indicator finally passed below the graduated scale and striking the attached thermometer was prevented from descending lower. The distance between the scale and thermometer corresponds to 0.10 inch, thereby indicating the lowest pressure as 27.70 (Captain Evans estimated the low point as 27.65). During this time the aneroid pumped violently, frequently rising 0.20 inch then returning to rest on the thermometer. At 1:04 p. m. the wind shifted to southwest with velocities quickly increasing until the gale raged as heavily as experienced before the center of the storm passed. At 1:25 p. m. a velocity of 150 miles was experienced, after which it gradually subsided, becoming moderate southerly at 8 p. m.

At the height of the storm rain and spray were driven in sheets hiding from view the foremast and rails. Glass was blown in, hatch covers, boat covers, and tarpaulins tossed into the sea, the radio antenna was carried away, skylights broken, and the interior of the ship drenched. The *Coamo* had but 92 tons of cargo aboard. The ship listed 20° and occasionally rolled to 40°.

Pressure readings recorded on the steamship "Coamo," September 1–3, 1930

Date	Time	Pressure	Date	Time	Pressure
		Inches			*Inches*
Sept. 1	3 p. m.	29.97	Sept. 3	4 a. m.	29.60
	4 p. m.	29.95		5 a. m.	29.60
	5 p. m.	29.94		6 a. m.	29.60
	5.30 p. m.	29.93		7 a. m.	29.64
	6 p. m.	29.94		8 a. m.	29.69
	7 p. m.	29.95		9 a. m.	29.72
	7.30 p. m.	29.94		10 a. m.	29.71
	8 p. m.	29.94		10.30 a. m.	29.66
	Midnight	29.92		10.35 a. m.	29.62
Sept. 2	6 a. m.	29.84		11 a. m.	29.53
	7 a. m.	29.86		11.20 a. m.	29.45
	8 a. m.	29.87		Noon	28.22
	9 a. m.	29.88		12.43 p. m.	28.18
	10 a. m.	29.90		12.45 p. m.	28.05
	11 a. m.	29.88		12.48 p. m.	27.85
	Noon	29.87		1 p. m.	27.78
	1 p. m.	29.85		1.01 p. m.	27.70
	2 p. m.	29.82		2 p. m.	28.30
	3 p. m.	29.80		2.30 p. m.	29.40
	4 p. m.	29.81		2.40 p. m.	29.50
	5 p. m.	29.80		3 p. m.	29.54
	6 p. m.	29.79		4 p. m.	29.60
	7 p. m.	29.80		5 p. m.	29.74
	8 p. m.	29.79		6 p. m.	29.79
	9 p. m.	29.76		7 p. m.	29.80
	10 p. m.	29.75		8 p. m.	29.86
	11 p. m.	29.71		9 p. m.	29.90
	Midnight	29.68		10 p. m.	29.91
Sept. 3	1 a. m.	29.67		11 p. m.	29.92
	2 a. m.	29.63		12 p. m.	29.94
	3 a. m.	29.62			

Pressure range from time of vessel's departure from San Juan to center of storm, 2.10 inches.
Pressure fell 0.08 in 1 minute, 1 p. m. to 1.01 p. m.; 0.20 in 3 minutes, 12.45 p. m. to 12.48 p. m; 1.23 in 40 minutes, 11.20 to noon.
Pressure increased 0.60 in 59 minutes, 1.01 p. m. to 2 p. m.

Captain Evans made a record of pressure readings which were read by Chief Officer Otto Berggren, as frequently as ship duties permitted. The ship's barometer was compared with standard at New York, July 16, and at San Juan, September 1, and found to be correct. On September 9, the instrument was 0.02 too high, comparison being made with portable aneroid.

[1] A more recent estimate made by an official of the American Red Cross places the loss of life at 2,000, the injured at 8,000, and the property loss at $15,000,000.—Ed.

FIGURE 1.—Shows some of the destruction in Santo Domingo. Hartwell

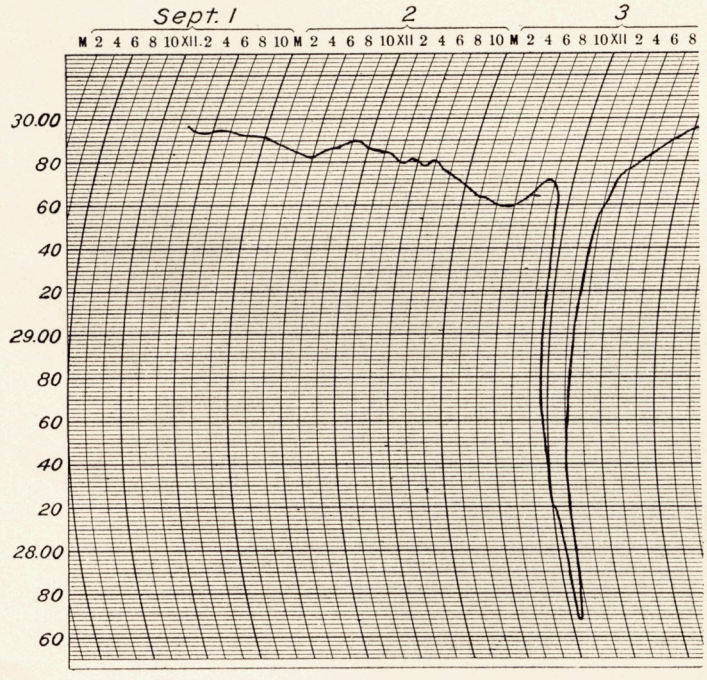

FIGURE 2.—Barograph curve steamship *Coamo* September 2-3, 1930, Santo Domingo hurricane

FIGURE 1.—Grove on outer edge of hailstorm, some damage

FIGURE 2.—Grove in center of hailstorm

APPENDIX II

C. L. MITCHELL

After leaving the northwestern corner of Haiti during the early night of the 4th, the tropical disturbance, which was now of minor intensity, crossed the Windward Passage and moved west-northwestward almost the entire length of Cuba, passing into the Gulf of Mexico during the 6th. No damage has been reported from Cuba. By the morning of the 7th, the disturbance had recurved toward the north and the next day toward the northeast, the center passing inland over Florida near Tampa about 4 a. m. of the 9th. The lowest barometer reading at that place was 29.70 inches with a maximum wind velocity of 36 miles per hour from the southeast.

During the next two days the disturbance moved very slowly northeastward over the Florida peninsula and into the Atlantic Ocean so that by the evening of the 11th its center was approximately 100 miles east of Jacksonville. No barometer reading as low as 29.80 had been reported since the center passed Tampa, and no strong winds, except that the steamship *J. Fletcher Farrell* which was east-southeast of the center during the afternoon of the 11th reported heavy squalls with wind from the southeast, reaching gale force at times. The morning reports of the 12th from land station and vessels showed that the center was some distance off the North Carolina coast south of Wilmington, but no strong winds and no pressure below 29.84 were reported. However, at 9.30 a. m. the steamship *Magmeric* off Frying Pan Shoals reported a pressure of 29.21 inches, and that it had fallen to 28.89 with a wind of force 12 at 8.30 a. m. As soon as this report was received, hurricane warnings were ordered hoisted immediately along the North Carolina coast from Southport to Beaufort, and southeast storm warnings north of Beaufort to the Virginia Capes. The center of the storm which was again of hurricane intensity eight days after passing over the city of Santo Domingo, approached close to the coast near Cape Lookout during the late afternoon of the 12th. However, little damage was done in this sparsely settled section. About a dozen small frame buildings were blow down at Cape Lookout and the Coast Guard headquarters building was damaged, while power and lighting systems at Beaufort and Morehead City were put out of commission for several hours and communication systems were disrupted.

By 8 p. m. of the 12th the center was passing east-northeastward to the south of Cape Hatteras where a maximum wind velocity of 60 miles per hour from the north was reported. During the next several days the disturbance moved almost directly eastward, the center passing a short distance north of Horta, Azores, on the 18th, after which the disturbance apparently merged with the severe storm that reached Ireland on the 19th. On the 15th the disturbance was still attended by winds of hurricane strength as shown by a report from the steamship *City of Agra*.

APPENDIX III.—ASSOCIATED PRESS DISPATCHES

AIRPLANE ENCOUNTERS SANTO DOMINGO HURRICANE

By GRETCHEN SMITH, Evening Star, September 11, 1930

Caught in the Santo Domingo hurricane, while flying from Porto Rico to Port au Prince, Haiti, en route from Brazil to the United States, Senhor Decio de Paulo Machado, representative from Brazil to the Pan American Conference, arrived in Washington last evening by plane specially chartered in Miami.

Senhor Machado left Rio de Janeiro about 10 days ago, having allowed himself ample time to arrive in Washington for the opening of the conference. On the hop between the Virgin Islands and Haiti, the Brazilian representative stopped at Porto Rico to lunch with Governor Roosevelt, a personal friend of many years. Senhor Machado related:

After leaving Porto Rico, I sat in front with the pilot of the plane, which was to make its next stop at Haiti. As I drowsed in my seat, I noticed directly before us a small black spot which seemed coming steadily toward us. As it approached it grew larger.

Not a breath of air was stirring and an ominous quiet seemed to weigh upon us. Suddenly, the wind began to blow and drops of rain like boiling water began to fall, rapidly becoming so violent that we were compelled to close all the windows of the plane.

The storm descended upon us so suddenly that before we knew it we were being swept along with the hurricane at a rate of 160 miles an hour. We were like a leaf in that storm.

When we had first seen the black spot approaching the pilot had remarked it was a storm coming and that he would 'beat it' by riding above it. That was impossible, as the storm had swept upon us before we had time to realize it. It was useless for the pilot to ride against it. He just allowed the plane to carry along with the storm at its will. We would be swept up into the air, and then dropped suddenly, as one might do when plunged into a body of water. At times I thought we would never come up from one of those drops.

However, we finally found ourselves above Santo Domingo Island, but everything was so dark and obscure, it was impossible to locate a place to land. After circling about for a short time, the pilot finally decided to land upon the water and take our chances of being rescued by sending wireless messages to shore. We landed safely, but after floating about for two or three hours, with no help from the land where we had sent messages we slowly taxied in toward the shore. We found ourselves at a small town, Barahona, on the coast about 15 miles from Santo Domingo City. No one in Barahona knew a thing about the hurricane. They laughed when we told them that a terrible storm had hit Santo Domingo. Barahona was untouched by the hurricane, and although telephonic and telegraphic communication to the capital were down, they merely thought they had been blown down by an ordinary storm.

The route of the storm was curious. It seemed to strike in spots. Certain parts of the country were terribly torn up, trees were uprooted and crops destroyed. Then directly next to a torn-up section the countryside was untouched.

RAINS SWELL OZAMA RIVER

PORT AU PRINCE, Haiti, September 8 (A. P).—Heavy rains lasting more than 24 hours have swollen the Ozama River and made travel through the hurricane zone in the interior of Santo Domingo all but impossible to-day. The Ozama's flow has increased to 15 miles an hour, effectually preventing boats from entering its mouth.

Airplanes to-day formed virtually the only mode of travel into the area. Relief work went forward to-day as energetically as possible under such circumstances.

PATHETIC SURVIVORS WATCH SKY

The population pathetically watched the arrival of each plane at the Santo Domingo field, hailing each as angels of mercy alighting from the sky amid a scene of great misery.

Aviation reconnaissance has shown that the hurricane after razing Santo Domingo City traveled northwest, destroying everything in its path in an area 25 to 40 miles wide for a distance of about 50 miles.

When the hurricane hit the side of the mountains, rising almost perpendicularly in its path, the storm actually skinned the south slope of the mountain range there and hurtled into the air, touching only the high points in the succeeding ranges upon its course to the sea.

RICH VALLEY AREAS SPARED

The area of the Santiago, Vega, and Boca Valleys, which are the productive part of the country, were spared. The people of Santiago with whom observers talked related that they could hear the storm, howling like a million fiends in the air, as it passed overhead. The people were greatly awed by the phenomenon.

Plantations east of Santiago within the area of the storm were wiped out for a distance of 15 to 20 miles.—*Evening Star, September 8, 1930.*